Results from the 1999 Drug and Alcohol Testing Survey

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FMCSA's Data Analyis Division annually conducts a survey to measure the percentage of drivers with commercial driver's licenses (CDLs) who test positive for controlled substances (henceforth referred to as "drugs") and/or alcohol in random and nonrandom (pre-employment, post-crash, and reasonable suspicion) testing. This article discusses the results from the 1999 survey.

All motor carriers with CDL drivers are required to have drug and alcohol testing programs, pursuant to Part 382 of the Federal Motor Carrier Safety Regulations. Each year, such carriers must randomly test 10 percent of their CDL drivers for alcohol and 50 percent of their CDL drivers for drugs. In addition, the FMCSA requires carriers to perform drug and alcohol testing (nonrandom) on CDL drivers when (1) the driver is being considered for employment (only for drugs and only when the driver has not recently been in a drug and alcohol testing program); (2) the driver has been involved in a crash (only when the crash involves a fatality, or when the driver receives a citation in a towaway- or injury-related crash); or (3) the driver is suspected by a supervisor of using drugs or alcohol while at work.

In the case of alcohol, an on-duty CDL driver is in violation of FMCSA regulations when his or her blood alcohol content is equal to .02 grams per 210 liters of breath, or higher. If the driver tests at a concentration of 0.04 or higher, he or she also must undergo referral, evaluation, and treatment, pursuant to Part 382, subpart F. The alcohol violation rate for the industry (published annually by the FMCSA and used to evaluate required motor carrier testing rates) is based on this latter .04 cutoff level. For drugs (marijuana, cocaine, opiates, amphetamines, and PCP), the cutoff levels for identifying use are based on guidelines set by the Department of Health and Human Services.

The positive usage rates presented herein represent weighted statistical estimates. These estimates are generalizable to the entire population of CDL drivers in the national fleet and have been derived using standard statistical techniques applicable to stratified samples. It is important to keep in mind that the rates obtained from these procedures do not represent "true values," but, rather, unbiased estimates of the true rates, with associated sampling errors.

Results

Estimates of positive usage rates from both random and nonrandom testing are discussed separately, below. All estimates from random testing are also presented in Tables 1 (drugs) and 2 (alcohol) on the following pages, which also include estimates from the 1997 and 1998 surveys. Positive usage rates for specific drugs were calculated for the first time with the 1999 data. Thus, in the case of random testing, Table 1 also presents positive usage rates for each of the five drugs for which testing is required. Note

that these drug-specific rates may not necessarily total to the overall positive rate for random testing because (1) a driver may test positive for more than one drug and (2) the overall positive rate may also include refusals to test, which are treated as positives. In cases where the standard error is more than twice the value of the estimate, the estimate has suppressed from the table (owing to its extremely low precision) and has been replaced by dashes.

Random Testing

For the 1999 survey, MIS forms were sent-out to 4,027 randomly selected motor carriers. 2,706 of these forms were completed and returned to FMCSA, resulting in usable data from 1,366 carriers (comprising 251,474 CDL drivers) for random controlled substance testing, as well as usable data from 1,172 carriers (comprising 66,029 CDL drivers) for random alcohol testing. Respondents providing nonusable data represent entities that are out-of-business, exempt, have no testing program in place, or belong to consortia which did not test any drivers for the carrier during 1999.

For random drug testing, the results are as follows:

Drugs: The estimated positive usage rate for drugs, based on random testing in 1999, is 1.3%. The 95% confidence interval for this estimate ranges from 1.0% to 1.6%. Thus, if the survey were to be replicated, it would be expected that this estimate would fall within this range in 95 out of 100 surveys. For 1998, this same rate was estimated to be 1.5%. Based on the levels of precision achieved for these two survey years, the change from 1998 to 1999 is not statistically significant. In other words, the measured difference in the two rates cannot be shown to be real and may be attributable to the randomness of the samples.

**Alcohol:** Based on random alcohol testing in 1999, the estimated percentage of CDL drivers with a blood alcohol content of 0.02 or higher is 0.5%. The estimated violation rate for alcohol use (the percentage of drivers with a blood alcohol content of 0.04 or higher), based on random testing in 1999, is 0.2% with a 95% confidence interval ranging from 0.05% to 0.3%. For 1998, the estimated violation rate was 0.4%. Differences between the alcohol violation rate estimates for 1998 and 1999 are not statistically significant.

**Part 382 Compliance:** Based on the 1999 survey results, the estimated percentage of subject motor carriers with random testing programs in place is 67%, and the estimated percentage of all CDL drivers participating in such programs is 94%.

Nonrandom Testing

Estimates of controlled substance positive usage rates for the nonrandom testing categories are shown in Table 1, beneath the random testing rates. Estimated rates from nonrandom alcohol testing are shown in Table 2. With the exception of pre-employment drug testing, the sample sizes achieved in the survey for the various nonrandom testing categories are much lower than those achieved for random testing. As a result, the estimated precision level of many of these estimates is low. Given the achieved levels of precision in the 1998 and 1999 estimates, year-to-year differences in nonrandom testing rates between these two years cannot be shown to be statistically significant.

Where the estimated rate in the table is zero and the standard error is missing, no drivers (or virtually no drivers) in the sample tested positive for the particular category. In such cases, the actual positive rate for the population is, in all likelihood, greater than zero, but the sample size was inadequate for producing a more precise estimate.

Table 1.
Estimates of Random and Nonrandom Drug Usage Rates
Among CDL Drivers for 1997, 1998, and 1999

	1997		1998		1999	
Category	**Estimate**	**Standard Error**	**Estimate**	**Standard Error**	**Estimate**	**Standard Error**
Random Testing Any Drug	1.3%	0.2%	1.5%	0.2%	1.3%	0.2%
Marijuana	na	na	na	na	0.6%	0.1%
Cocaine	na	na	na	na	0.3%	0.1%
Amphetamines	na	na	na	na	0.3%	0.1%
Opiates	na	na	na	na	----	---
PCP	na	na	na	na	0.0%*	
NonRandom: Pre-employment	2.0%	0.15%	2.0%	0.2%	2.3%	0.2%
Post Crash Nonfatal	5.5%	2.2%	2.9%	1.0%	2.6%	1.1%
Post Crash Fatal	----	---	----	---	----	---
Reasonable Suspicion	---	---	12.8%	1.0%	----	---
Return to Duty	0.2%	0.08%	----	---	1.7%	0.7%
Follow-up	----	---	4.2%	1.9%	4.9%	1.7%

* indicates extremely low precision.
"na" indicates not available.
"—" indicates suppressed estimate due to low precision.

Table 2.
Estimates of Random and Nonrandom Alcohol Usage Rates
Among CDL Drivers for 1997, 1998, and 1999

	1997		1998		1999	
Category	**Estimate**	**Standard Error**	**Estimate**	**Standard Error**	**Estimate**	**Standard Error**
Random Testing 0.02 + BAC	na	na	na	na	0.5%	0.2%
0.04 + BAC	0.2%*	0.1%	0.4%	0.1%	0.2%*	0.1%
NonRandom: Pre-employment (.04 +)	---	----	---	---	0.0%*	
Post Crash Nonfatal (.04 +)	0.01%	0.004%	---	----	---	----
Post Crash Fatal (.04 +)	---	----	---	----	0.0%*	----
Reasonable Suspicion (.04 +)	---	----	5.1%	2.2%	6.7%	2.8%
Return to Duty (.04 +)	0.0%*	----	---	----	---	----
Follow-up (.04 +)	---	----	---	----	---	----

* indicates extremely low precision.
"na" indicates not available.
"—" indicates suppressed estimate due to low precision.